ENVIRONMENTAL RESTORATION

FIVE-YEAR REVIEW
ELMENDORF AFB, ALASKA

June 2003

The Air Force is conducting a five-year review of the cleanup of contaminated sites at Elmendorf AFB. The purpose of this review, which is required by federal environmental regulations, is to see if cleanup activities (i.e. cleanup remedies) continue to be protective of human health and the environment, and if not, to plan for additional activities. The U.S. Environmental Protection Agency (EPA) and the Alaska Department of Environmental Conservation (ADEC) are participating in this review.

Five-Year Remedy Reviews

This is the second cleanup remedy review for Elmendorf AFB. Reviews will be conducted at least every five years or until contaminant levels allow unlimited use of the site and unrestricted access.

This review will evaluate whether the selected remedies at environmental restoration sites are operating as designed and remain protective of human health and the environment. The review will also determine if the cleanup levels initially mandated remain protective. Conditions on the site could have changed, the remedy may not be operating as designed or intended, or there could be new, more stringent, cleanup levels.

Background information and decision documents for Elmendorf are on file at the Information Repositories listed on the back of this page. Public comments are welcome and may be sent to the base Environmental Community Relations Coordinator, also listed on the back of this sheet, until July 29, 2003. The final review detailing the findings will be placed in the Information Repositories in the fall of 2003.

Operable Unit Summaries

Most sites on Elmendorf AFB are grouped into "operable units" (OUs) for study and remediation, based on a common contaminant, source, geographical location or similarities in the medium (soil or water) contaminated. OU3 is not being evaluated because it was agreed upon by all parties in the 1998 Five-Year Review that no further five-year reviews would be required. All cleanup activities have been completed and OU3 is designated for unrestricted use.

Operable Unit 1: The selected remedy at OU1 was monitored natural attenuation. Contaminants of concern were manganese and the chlorinated solvent trichloroethylene (TCE). These contaminants have been monitored at multiple locations in the last five years Concentrations of manganese in groundwater are now below cleanup levels. TCE remains above cleanup levels at one location.

Operable Unit 2: The selected remedy for fuel contamination at ST41 was source removal, operation of a groundwater treatment system, and monitored natural attenuation. In 1996, four underground fuel storage tanks and associated piping were removed. Contaminated soil was removed and treated. The groundwater treatment system was operated for several years then shut down with EPA and ADEC concurrence. Groundwater monitoring data collected from multiple wells over the last five years has demonstrated that natural attenuation is occurring.

Operable Unit 4: In 1995 and 1996, bioventing systems were installed at several sites in OU4 to treat fuel and solvent contamination. Cleanup goals for shallow soils have been reached at two sites, but fuel contaminants in deep soils still exceed cleanup levels at two locations.

One of the bioventing systems was expanded to treat deep soil contamination that was outside the original treatment zone. Deep soils within the original treatment zone have reached cleanup levels. Groundwater in the shallow aquifer continues to exceed cleanup levels for fuel contaminants and certain waste solvents. Natural attenuation of fuel compounds appears to be occurring as predicted, but natural attenuation of solvents may take longer than expected.

Operable Unit 5: In 1996, an engineered wetland treatment system was constructed to collect and treat groundwater seeps. Groundwater in the shallow aquifer continues to exceed cleanup levels for fuel contaminants and TCE. The wetland treatment system is expected to operate for another 18 years.

Operable Unit 6: In 1996, a high-vacuum extraction treatment system was installed to treat fuel- and solvent-contaminated soil and groundwater at SD15. This system was expected to treat contamination to cleanup levels by 2002. Sampling conducted in 2002 indicates that deep soils have reached cleanup levels except one location still above cleanup levels for gasoline range organic (GRO) compounds. Shallow soil contamination of GRO and benzene, toluene, ethylbenzene and xylene (BTEX) still remains at two distinct locations at the site. Groundwater contamination is still present. The contaminants of concern remaining above remediation goals are benzene and TCE. System modifications or other remediation techniques are being considered to treat the remaining contamination.

At LF02, landfill debris was removed and limited soil cover was applied at three areas to minimize potential human exposure to lead-contaminated soils.

At LF04, landfill debris removal is conducted annually along the beach and is expected to continue until 2034.

Steps in the Five-Year Review Process	
Document Review	A review of the record of decision (ROD) and other pertinent documents for the site or operable unit. This includes the cleanup objectives, design review, operation and monitoring plans.
Site Inspection/Interviews	Inspections of the site and interviews with operations personnel to document if land use or site conditions have changed in ways that impact the protectiveness of the remedy.
Assessment of Remedy Protectiveness	A technical assessment of remedy protectiveness. One component of the technical assessment is to review cleanup standards in the ROD to ensure they are still valid and comparable to current standards.
Final Report	A report including: A statement citing applicable regulations and the purpose of the review, site chronology, physical characteristics and history of land use and contamination, remedial actions and basis for remedial actions, progress since last Five-Year Review, technical assessment of remedy protectiveness, issues and recommendations for any required or suggested improvements or follow-up actions and a "certification of protectiveness" by an Air Force official that the site remains protective of human health and the environment. If the findings show that it is not protective, the report will state what steps are required to make it so. The final element of the report discusses when the next review is due and what areas will be included or excluded and why.

For More Information

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MORE INFORMATION ON OUR WEB SITE:

http://www.elmendorf.af.mil/othrorgs/restorat/webdocs/index.htm

Information Repositories

Alaska Resources Library & Information Services (ARLIS)
3150 C Street Suite 100
Anchorage, AK 99503

(907) 272-7547

University of Alaska Anchorage Consortium Library
3211 Providence Drive
Anchorage, AK 99508

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